

R E M A R K S

- Claims 1 to 24 and 26 to 42 will be pending upon entry of this Amendment.
- Claim 1 has been amended herein.
- Claim 25 was cancelled without prejudice in a previous response.
- Claim 1 will be the only independent claim pending upon entry of this Amendment.

Applicants thank the Examiner for the courtesy extended during the telephonic interview on June 18, 2009. A summary of the interview is being submitted herewith.

Rejection of claims 1, 6-24 and 26-42 under 35 USC §103(a)

Claims 1, 6-24 and 26-42 stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over WO 02/15255, filed August 11, 2000, by Samantha Tan (hereinafter "Tan") in view of US 6,488,037, filed August 17, 2000, and issued December 3, 2002, to Richard L. Guldí (hereinafter "Guldí") and US 2003/0136428, filed January 23, 2002, by Ole Krogh (hereinafter "Krogh").

Claim 1 has been amended to recite, "A method for cleaning silicon carbide materials on a large scale, the method comprising the acts of: using an integrated system that is adapted for handling a multiplicity of said silicon carbide materials during said cleaning; purging at least one opening within each of silicon carbide materials using a continuous flow of nitrogen gas stream; ultrasonicating

said silicon carbide materials in an aqueous solution of inorganic acid after the purging has begun; ultrasonicating said silicon carbide materials in a bath of deionized water after the purging has begun; and wherein purging using the continuous nitrogen gas stream continues during ultrasonicating of said silicon carbide materials in the aqueous solution; wherein purging the at least one opening within each of the silicon carbide materials blocks the migration of the aqueous solution of inorganic acid to a base material." Applicant submits that nowhere in any of the references is there any teaching or suggestion that the silicon carbide materials are continuously purged with a nitrogen gas stream to block migration of the aqueous solution or that the purging occurs before immersion in a bath, in addition to the other claimed features, as presently claimed.

As stated in the Office Action, "the combination of Tan and Guldì does not teach purging at least one opening within each of the silicon carbide materials using a nitrogen gas stream during ultrasonicating the silicon carbide materials in the aqueous solution; wherein the purging the opening within each of the silicon carbide materials prevents migration of the aqueous solution of inorganic acid to a base material." Applicant respectfully submits that contrary to the assertions in the Office Action, *Krogh* does not cure the deficiencies of the *Tan* and *Guldì* references.

With respect to the *Krogh* reference, *Krogh* merely describes a method of cleaning process residues from the surface of a substrate processing chamber component holes. See, e.g., para. [0005] of *Krogh*. As such, *Krogh* describes partially immersing the component in a cleaning solution, such that some of the cleaning solution may remove the residue from the holes. "**After** the component is at least partially immersed in the cleaning solution," the non-reactive gas is flowed through the holes of the component. See, e.g., para. [0013] of *Krogh* (*emphasis added*). The presently claimed invention, on the other hand, describes purging the openings of the silicon carbide materials **before** placing them in the solutions such that the continuous flow of nitrogen blocks the migration of the aqueous solution of inorganic acid to a base material. Additionally, *Krogh* describes flowing the non-reactive gas through the holes only when the component is immersed in the cleaning solution. After the immersion in the cleaning solution, where the non-reactive gas is flowed through the holes, the component is removed from the cleaning solution and washed with deionized water and then the component is ultrasonically rinsed in deionized water. See, e.g., para. [0014] of *Krogh*. Nowhere in *Krogh* is there any indication that the non-reactive gas is flowed through the holes after the cleaning solution step. Applicant further respectfully submits that this is no reason to continue the flow of non-reactive gas in *Krogh* during the subsequent steps, as the subsequent steps merely involve deionized water and not any sort of cleaning solution. The presently claimed invention, on the other hand, continues purging the

openings during the ultrasonication steps. As described in Applicant's specification, "the nitrogen gas purge continues until the final cleaning operation of the bonded and sintered silicon carbide material is complete. The nitrogen gas purge prevents migration of chemicals, due to capillary action, from the various chemical baths in method 200 to the anodized aluminum base of the wafer-showerhead, for example." See, e.g., page 8, lns. 11-18 of Applicant's specification.

In light of the foregoing, Applicant submits that the features of amended independent claim 1, and claims 6-24 and 26-42, which depend therefrom, are not disclosed or suggested by any of the references, for at least the reasons described above. Accordingly, withdrawal of the §103 rejections of the pending claims is requested.

Rejection of claims 2 and 3 under 35 USC §103(a)

Claims 2 and 3 stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over *Tan* in view of *Guldi* and *Krogh*, and further in view of Applicant's admitted prior art (hereinafter "AAPA").

Regarding claims 2 and 3, as described above *Tan*, *Guldi*, or *Krogh*, alone or in any combination, do not disclose or suggest all of the features of independent claim 1; for example, none of *Tan*, *Guldi*, or *Krogh*, disclose or suggest, "purging at least one opening within each of silicon carbide materials using a continuous flow of nitrogen gas stream; ultrasonicating said silicon carbide materials in

an aqueous solution of inorganic acid after the purging has begun," as presently claimed. Applicant submits that AAPA does not cure the deficiencies of the *Tan*, *Guldi*, or *Krogh* references. As claims 2 and 3 depend from, and incorporate the features of, independent claim 1, it is submitted that claims 2 and 3 are patentable over the cited references for at least the same reasons that claim 1 is patentable.

Withdrawal of the §103(a) rejection is accordingly requested.

Rejection of claims 4-5 under 35 USC §103(a)

Claims 4 and 5 stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over *Tan* in view of *Guldi* and *Krogh*, and further in view of US 6,273,950, filed January 2, 2001, and issued August 14, 2001 to Makoto Kitabatake (hereinafter "*Kitabatake*").

Regarding claims 4 and 5, as described above *Tan*, *Guldi*, or *Krogh*, alone or in any combination, do not disclose or suggest all of the features of independent claim 1; for example, none of *Tan*, *Guldi*, or *Krogh*, disclose or suggest, "purging at least one opening within each of silicon carbide materials using a continuous flow of nitrogen gas stream; ultrasonicating said silicon carbide materials in an aqueous solution of inorganic acid after the purging has begun," as presently claimed. Applicant submits that *Kitabatake* does not cure the deficiencies of the *Tan*, *Guldi*, or *Krogh* references. As claims 4 and 5 depend from, and incorporate the features of, independent claim 1, it is

submitted that claims 4 and 5 are patentable over the cited references for at least the same reasons that claim 1 is patentable.

Withdrawal of the §103(a) rejection is accordingly requested.

Conclusion

In light of the Applicants' foregoing amendments and arguments, reconsideration and withdrawal of the objections and rejections are respectfully requested.

Applicants believe that all the pending claims are now allowable, and that the application is in condition for allowance. Applicants respectfully request reconsideration and allowance of the same.

Applicants do not believe that any additional fees are due regarding this Amendment. However, if any additional fees are required, please charge Deposit Account No. 04-1696.

Respectfully Submitted,



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